Chloride & TDS Standards for States
Updated 1.24.06

REGION 2	TDS	Chloride
New York	Class A Special Freshwaters: Shall not exceed 200 mg/L. Class AA, A, B, C, AA-Special Freshwaters: Shall be kept as low as practicable to maintain the best usage of waters but in no case shall it exceed 500 mg/L.	250 mg/L (Human health - water supply)
New Jersey	Freshwater Aquatic Life: No increase in background which may adversely affect the survival, growth or propagation of the aquatic biota. Compliance with water quality-based WET limitations or LC50 50%, whichever is more stringent, shall be deemed to meet this requirement. Freshwater General: No increase in background which would interfere with the designated or existing uses, or 500 mg/L, whichever is more stringent. Marine Waters General: None which would render the water unsuitable for the designated uses.	250 mg/L (Freshwater organoleptic effect-based criteria) 860 mg/L (Freshwater acute aquatic life criteria) 250 mg/L (Freshwater chronic aquatic life criteria)
Puerto Rico	Freshwater General: Shall not exceed 500 mg/l, except when due to natural phenomena.	Freshwater General: Shall not exceed 250 mg/l, except when due to natural phenomena.
U.S. Virgin Islands	None.	None.

REGION 3

Delaware and Pennsylvania

First, I'll mention that Delaware has neither a TDS or chloride criteria. Now, for PA, it should be mentioned that their chloride criteria of 250 mg/l (max) only applies at the point of all existing or planned surface potable water supply withdrawals. They do have a TDS criteria of 500 mg/l as a monthly average value, maximum 750 mg/l. This, too, only applies at the point of all existing or planned surface potable water supply withdrawals.

REGION 4

North Carolina

For all fresh surface waters, North Carolina has chloride 'action level' of 230 mg/l. (For NPDES permitting the number is used in conjunction with WET tests to determine if there is a violation of water quality standards. For all other purposes, the 230 mg/l is a real water quality criterion.)

To protect waters with public water supply designations they have a criterion of 250 mg/l chloride.

NC does not have a TDS number.

Georgia & South Carolina

Neither Georgia nor South Carolina have chloride or TDS criteria. They'd most likely use the 'free-froms' statements. Let me know if there is anything else you might need.

Kentucky

Kentucky's chloride criteria are

drinking water supply -
250, 000 µg/l applied at harmonic mean flow for cancer-linked substances, and 7Q10 flow for noncancer-linked substances.
aquatic life-
acute - 1,200,000 µg/l applied at the 7Q10 flow
chronic - 600,000 µg/l applied at the 7Q10 flow

TDS - Kentucky criteria - Total dissolved solids or specific conductance shall not be changed to the extent that the indigenous aquatic community is adversely affected.

Alabama and Tennessee

Here is the requested information as it pertains to AL and TN.

AL does not have a chloride or TDS criteria. The "free-froms" would likely be used.

TN has a TDS criteria but not a chloride criteria.

Total Dissolved Solids- The total dissolved solids shall at no time exceed 500mg/l. (This criteria applies to domestic water supply and industrial water supply uses.)
Otherwise TN has a narrative "Other pollutants - The waters shall not contain other pollutants in quantities that may be detrimental to pubilc health or impair the usefulness of the water as a source of domestic water supply." The meaning remains the same but wording varies between this criteria depending on which use it is included within. TN also has other general narrative "free-from" type statements.

Mississippi

For the Mississippi River from Mississippi-Tennessee border to Vicksburg

Chlorides	60 mg/l
Sulfates	150 mg/l
TDS	425 mg/l

For Vicksburg south to the Mississippi-Louisiana border

Chlorides	75 mg/l
Sulfates	120 mg/l
TDS	400 mg/l

For all waters of the State:
Waters shall be free from materials attributable to municipal, industrial, agricultural or other discharges producing color, odor, taste, total suspended or dissolved solids, sediment, turbidity, or other conditions in such degree as to create a nuisance, render the waters injurious to public health, recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated use.

Public Water Supply:
Chlorides (Cl): There shall be no substances added which will cause the chloride content to exceed 230 mg/l in freshwater streams.
Dissolved Solids: There shall be no substance added to waters that will cause the dissolved solids to exceed 500 mg/l for freshwater streams.

Recreation and Fish & Wildlife:
Dissolved Solids: There shall be no substances added to the waters to cause the dissolved solids to exceed 750 mg/L as a monthly average value, nor exceed 1500 mg/L at any time for freshwater streams.

Florida

The Chloride standard in Florida is:

Class I (Potable Water Supplies) - "Less than or equal to 250 milligrams/L"

Class II (Shellfish propagation or Harvesting) - "Not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained."

Class III Marine only (Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife) - same as Class II

The Dissolved Solids standard is:

Class I (Potable Water Supplies) - "Less than or equal to 500 as a monthly average; less than or equal to 1,000 maximum" in units of milligrams/L

REGION 5

Chloride:

State	Chloride Criteria
IL	500 mg/L
IN	AL: 860/230, PWS: 250
MI	AL: ---, PWS: 250
MN	AL: 860/230, PWS: ---
OH	AL: ---, PWS: 250
WI	AL: 757/395, PWS: ---

Region 5 TDS Criteria				
	Aquatic Life	Public Water Supply	Agricultural Supply	Industrial Supply
USEPA	---	250 mg/L (sulfates + chlorides)	500 mg/L (sulfates + chlorides)	---
IL	1000 mg/L (general use criterion)			
IN	--- (current triennial deletes 1000 mg/L TDS criterion in favor of a sulfate criterion of 1000 mg/L. In the GL basin, IN has chloride criteria for aquatic life protection of 860 mg/L acute and 230 mg/L chronic)	750 mg/L at point of intake (neither chlorides nor sulfates may exceed 250 mg/L)	---	---
MI	Not to exceed 750 mg/L or 500 mg/L as monthly average	--- (Not to exceed 250 mg/L chlorides or 50 mg/L chlorides as a monthly average)	---	---
MN	--- (chloride 860	--- (250 mg/L	1000 mg/L (as salinity)	---

	mg/L acute, 230 mg/L chronic)	sulfate)		
OH	1500 mg/L, OMZA	750/500 mg/L, OMZA, Ohio River basin (chlorides, 250 mg/L, OMZA, sulfates, 250 mg/L, OMZA)	---	---
WI	--- (chlorides, 757 mg/L acute, 395 chronic)	---	---	---

REGION 6

Arkansas:
The State has a fairly tight limit on chloride/sulfate/TDS which is tied to the State's drinking water use. In the last few years we've approved a few site-specific modifications, which required the removal of the default drinking water use (which applies to all waters of the State). There, we've required a UAA-lite showing that the concentrations will not cause toxicity. You can take a look at the repository and get specifics.

Louisiana:
In LA, criteria represent arithmetic means of existing data. Criteria for marine and estuarine waters are set on a case-by-case basis. Increases over background can be allowed on a case-by-case basis as well. But they also have a "shall not exceed" statement limiting chlorides to 250 mg/L that apply unless a UAA shows that no toxicity will result.

New Mexico:
The State has segment-specific criteria for chloride that range from a "shall not exceed" 5.0 mg/L to 10,000 mg/L in the far southern portion of the State.

Oklahoma:
Oklahoma has some historical limitations related to suitability for livestock and irrigated ag that are contained in an appendices to the standards (as I recall, they are proposing to remove those historical numbers though). These are based on a yearly mean standard specific to regulatory segments.

Texas:
TX has established site-specific criteria for minerals based on averages that are established over annual period. The criteria are segment- specific and I think range from about 50 to 650 mg/L.

REGION 7

Kansas

You already have Kansas accounted for in your 9 state count. To be more specific, Kansas has an acute chloride criterion of 860mg/L and a drinking water supply criterion of 250mg/L. There is no chronic chloride criterion.

Kansas does not have a TDS standard.

Missouri

The Chloride Standard in MO WQS:

	Aquatic Life	Drinking Water Supply
Chronic	230 (+)	250
Acute	860 (+)	

The (+) indicates that the concentration of chloride plus sulfate shall not exceed 1000 mg/L in streams with 7Q10 low flow of less than one (1) cubic foot per second.

It is my understanding that MO does not have a TDS criterion.

Nebraska

Nebraska has a chloride criterion:

Aquatic life use:
Not to exceed 860 mg/l at any time or a four-day average concentration of 230 mg/l except as specified in 003.02B5b and 003.02B6a (Site-specific criteria based on natural background).

and

Public Drinking Water:
not to exceed 250mg/l

TDS - yes, they do have one for drinking water.
but, i was keeping that to myself...
it is: not to exceed 500mg/l.

REGION 8

Colorado

Segments with a Water Supply Classification **Chloride = 250 mg/L** (30 day average)
Segments with a Water Supply Classification **Sulfate = 250 mg/L** (30 day average)
TDS - none

Except that, for some segments with a water supply classification, but no actual use, the sulfate standards have been adjusted to reflect ambient conditions as of January 1, 2000 (site-specific adjustments to reflect background quality).

Montana

Montana has numeric EC values for a number of waters in the Coal Bed Methane development area of the State.

[Note: electrical conductivity, (EC) is the ability of water to conduct an electrical current at 25 degrees C. The electrical conductivity of water represents the amount of total dissolved solids in the water and is expressed as Siemens/cm or mhos/cm or equivalent units.]

Summary of Montana's Numeric WQS for SAR/EC								
	Irrigation Season (3/2 - 10/31)				**Non-Irrigation Season (11/1 - 3/1)**			
Watershed	**EC (ave)**	**EC (max)**	**SAR (ave)**	**SAR (max)**	**EC (ave)**	**EC (max)**	**SAR (ave)**	**SAR (max)**
Rosebud Creek	1000	1500	3.0	4.5	1500	2500	5.0	7.5
Tongue River	1000	1500	3.0	4.5	1500	2500	5.0	7.5
Powder River	2000	2500	5.0	7.5	2500	2500	6.5	9.75
L. Powder River	2000	2500	5.0	7.5	2500	2500	6.5	9.75
Tongue River Reservoir	1000	1500	3.0	4.5	Reservoir Standards apply year round			
Tributaries	500	500	3.0	4.5	500	500	5.0	7.5

North Dakota

Lakes and Class I Streams
Chloride (total) = 100 mg/L
Sulfate (total) = 250 mg/L
TDS - none

Class IA Streams
Chloride (total) = 175 mg/L
Sulfate (total) = 450 mg/L
TDS - none

Class II Streams
Chloride (total) = 250 mg/L
Sulfate (total) = 450 mg/L
TDS - none

Class III Streams
Chloride (total) = 250 mg/L
Sulfate (total) = 750 mg/L
TDS - none

South Dakota

Uses	
Drinking water	250 mg/L chloride (maximum)
Cold water permanent	100mg/L chloride (maximum)
Agriculture	2500 EC (average) 4375 EC (maximum)
Commerce and industry	2000 TDS (average) 3500 TDS (maximum)

Utah

For segments with a Class 4 (agriculture) use designation, **TDS = 1,200 mg/L** to protect irrigation uses.

For segments with a Class 4 (agriculture) use designation, **TDS = 2,000** mg/L to protect stock watering uses.

For some segments with Class 4 (agriculture) use designation, site-specific TDS criteria have been adopted based on attainability analyses (ambient-based criteria).

Chloride - none

Wyoming

Class 2 Fisheries and Drinking Water	230 mg/L (average) 860 mg/L (maximum)
Class 3 Aquatic life other than fish	230 mg/L (average) 860 mg/L (maximum)

Wyoming has adopted EPA's 304(a) chloride criteria, applicable to Classes 2 and 3 (the aquatic life use classifications). However, in its triennial review now underway, the State is proposing to remove the numeric chloride criteria from Class 3 (the non-fish aquatic life use). This proposal is based on two factors: 1) oil and coal bed methane discharges of produced water to ephemeral streams (effluent-dependent waters) cannot meet the chloride criteria, and 2) no other State in Region 8 has adopted EPA's 304(a) chloride criteria (and suffered no consequences).

REGION 9

California

CA's Central Valley Regional Water Quality Control Board's WQS include the following water quality objectives (criteria) for TDS:

- "Shall not exceed 125 mg/l (90 percentile)" in the American River;
- "Shall not exceed 100 mg/l (90 percentile)" in Folsom Lake; and
- "Shall not exceed 1300,000 tons" in Goose Lake.

California's WQS for the Sacramento/San Joaquin Delta include a chloride criterion of 250 mg/l for a portion of the Delta (associated with some water supply intakes), which is only slightly less stringent than the 304(a) criterion you cited. The Delta WQS were last approved in the mid '90s; however, I don't know the origins of this particular criterion -- it may have been approved

in an earlier incarnation of the standards. Otherwise, based on Phil's message, below, it appears that chloride criteria in our states tend to be more stringent than EPA's criteria, rather than less.

Nevada, Arizona, Hawaii, Guam

CA and NV have both chloride and TDS numeric criteria that are waterbody specific. (Some of the CA "TDS" standards are expressed in terms of specific conductivity.) AZ has TDS numbers that apply to many waterbodies (site-specific) but not chloride. HI has a specific conductance standard of not more than 300 micromhos/cm for their freshwaters. Guam has both chloride and TDS standards.

REGION 10

Washington

Washington has a dissolved chloride standard for freshwater (acute is 860 mg/L; chronic is 230 mg/L). (The footnote to this standards states: This criterion is in association with sodium. It will probably not be adequately protective when the chloride is associated with potassium, calcium, or magnesium, rather than sodium).

No TDS criterion.

Alaska

For freshwater aquatic life, Alaska has the same chronic and acute chloride criteria as the Missouri values you cite below (230 and 860 mg/L), but I don't believe that AK has the same 7Q10 trigger that MO has. Alaska does say that the chronic and acute values "applies to dissolved chloride when associated with sodium" but that "This criterion may not be adequately protective when the chloride is associated with potassium, calcium, or magnesium. Also, because freshwater animals have a narrow range of acute susceptibilities to chloride, excursions above this criterion might affect a substantial number of species."

Furthermore, Alaska has a "dissolved inorganic substances" criterion for freshwater that includes TDS and chloride components. Attached is a summary of that criterion. I typed up the table pretty quickly so if you use this in any super-official forum, it might be best to double-check the AK WQS for accuracy (http://www.dec.state.ak.us/regulations/pdfs/70mas.pdf).

Alaska “dissolved inorganic substances” criteria. 18 AAC 70.020(b)(4). From June 26, 2003 version of AK WQS.

Designated use	Dissolved inorganic substances criterion
Water supply – drinking, culinary, food processing	Total dissolved solids (TDS) from all sources may not exceed 500 mg/l. Neither chlorides nor sulfates may exceed 250 mg/l.”
Water supply – agriculture, including irrigation and stock watering	“TDS may not exceed 1,000 mg/l. Sodium adsorption ratio must be less than 2.5, sodium percentage less than 60%, and residual

	carbonate less than 1.26 milliequivalents/liter (see note 6)."
Water supply – aquaculture	"TDS may not exceed 1,000 mg/l. A concentration of TDS may not be present in water if that concentration causes or reasonably could be expected to cause an adverse effect to aquatic life (see note 12)."
Water supply – industrial	"No amounts above natural conditions that can cause corrosion, scaling, or process problems."
Contact recreation	"Not applicable."
Secondary recreation	"Not applicable."
Growth and propagation of fish, shellfish, other aquatic life, and wildlife	"Same as (4)(A)(iii)." [(4)(A)(iii) is the criterion for aquculture above]

Idaho

Does not have Chloride or TDS standards.

Oregon

OR's TDS standard is:

Total Dissolved Solids: TDS: The concenterations listed below may not be exceeded unelss otherwise specifically authorized by DEQ upon such conditions as it may deem necessary: All Fresh WAter Streams and Tributaries - - 100.0 mg/L

Their Chloride standard is: Fresh Water Acute: 860mg/l, Fresh water Chronic: 230mg/l,

Region 10 Tribal

	Chloride	**TDS**
Spokane Tribe	860/230 mg/l - aq life 250 mg/l - water supply	No TDS Criteria
Warm Springs Tribe	no aq life numbers	TDS criterion from SDWA (500 mg/l - 250 mg/l chloride & sulfate)
Port Gamble S'Kllalam	860/230 mg/l - aq life	No TDS criteria